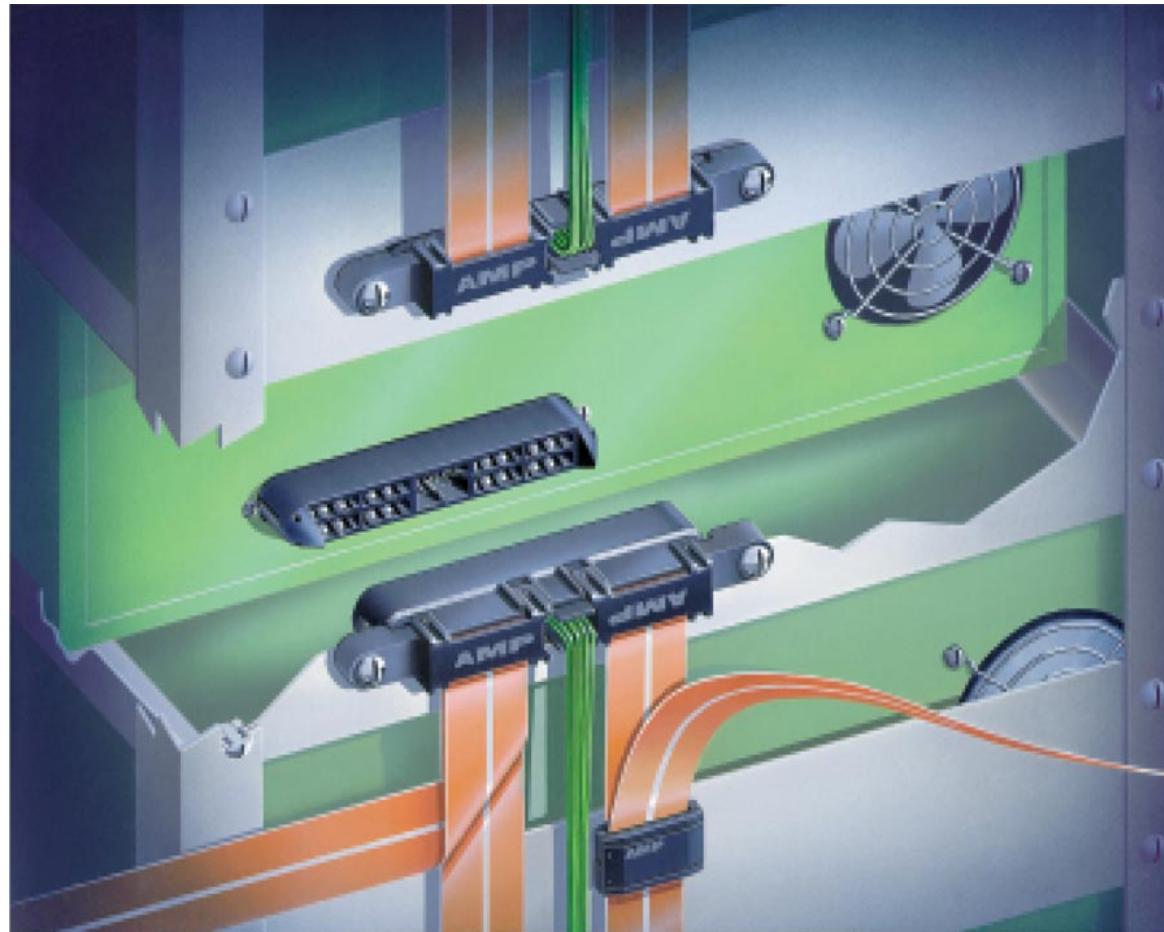


AMPOWER Wave Crimp System for Power Distribution



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AMPOWER Wave Crimp System

- Designed around the electrical and mechanical advantages of flat copper cable for power bussing.
- The family of Wave Crimp interconnections offer unique and cost effective solutions to power supply interconnection and distribution problems in mid range systems.
- Shown is a card cage wired with Wave Crimp along with other components for display.



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AMPOWER Wave Crimp System

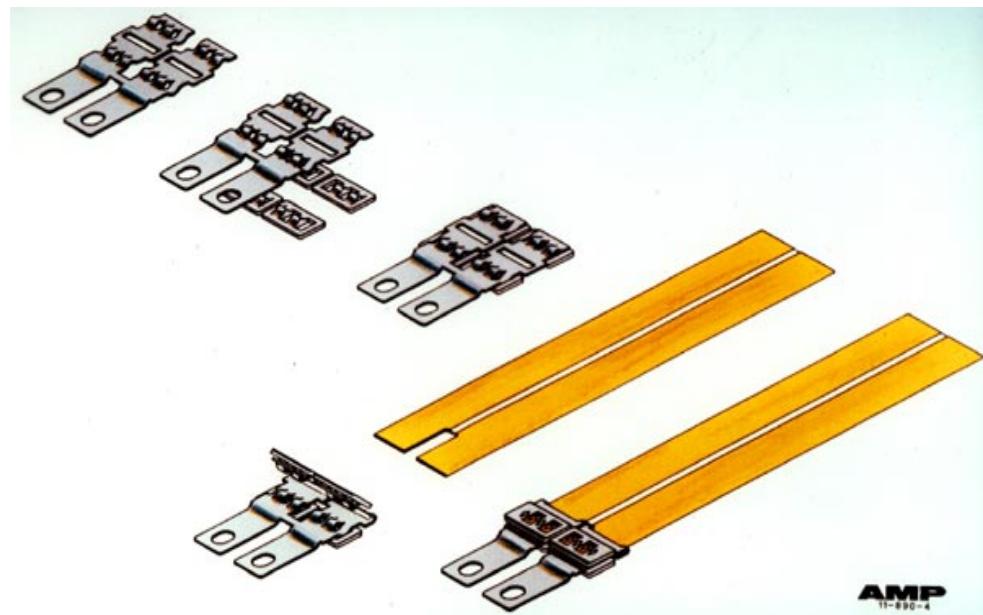
Key Features

- Utilizes flat cable.
- Separable interfaces have positive locking, polarization and contract shrouding.
- Right angle and vertical headers on 2.54 [.100] centers accommodate standard 1.02 [.040] PCB hole diameter.
- Unique flat cable tap that allows branching from primary trunk lines, side tapping and discrete wire tapping.
- Assemblies are measured at 70-110 amps (with 30°C t-rise) depending on mounting interface.
- Four cable self-aligning connector can pick up 2.03 [.080] misalignment off a common axis and measure 80 amps per cable (at 30°C t-rise) depending on the application.



AMPOWER Wave Crimp System

- Five components are combined in a termination assembly. A hard alloy transition with 4 copper inserts. This provides for an impressive cable crimp shearing action, in addition to stability and conductivity for the mating interface.
- The cable end is prepared with a cut and notch tool for insertion into the assembly. The final step is staking which locks it all together.

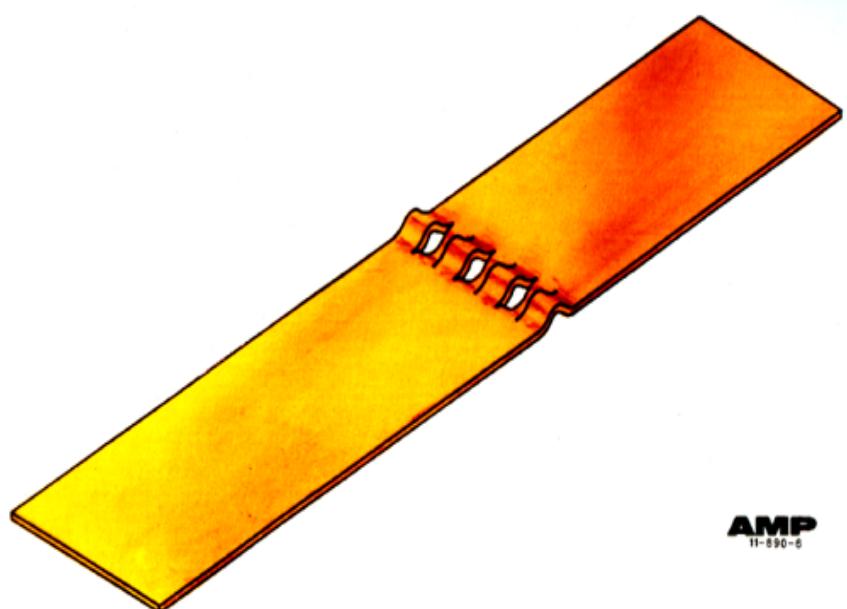


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The “Wave” Crimp

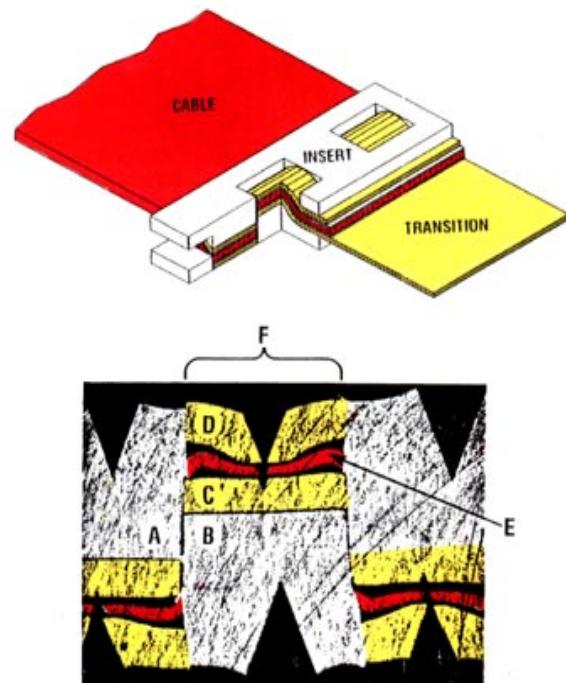
- Multiple “waves” are created through the shearing action of the application tooling during termination. Multiple strips are created in an alternating up and down orientation exposing sheared edges which become the crimp interface. This results in a conductive surface area of 150% of the cable cross section.





Crimp Anatomy

- The sheared cable “wave” edges contact the copper inserts.
- Stored energy introduced by staking “V” shapes into the inserts and transitions ensures the reliability of this gas tight interface.
- Over the life of the termination, resistance is expected to vary no more than 20 micro ohms.





AMPOWER Wave Crimp System

Flat Cable

- Flat copper cable with extruded TEFZEL insulation is available in four styles with current carrying capability of up to 110 amps per conductor.
- Each of these cable options is easily terminated with the Wave Crimp technology

Copper cable used in AMPOWER Wave Crimp System assemblies is available in dual or single conductor in .010 [0.25] or .020 [0.51] thick copper.		Copper Cable Variations	
Conductor Thickness	Resistance	Circular MILS	Approx AWG
Single	Dual	Per Conductor	Per Conductor
.010 0.25	.012 2.000	12,586	9
.020 0.51	.456 999	5,729	13

Note: The D.C. resistance of a 12.00 in. [304.80] length of conductor, when measured at 25°C and 10 amps, shall be < this figure (in millims).

Single Conductor

Dual Conductor

Single Conductor

Dual Conductor



AMPOWER Wave Crimp System

Why Flat Cable?

- Increased surface area of flat cable provides for higher convective heat flow resulting in more efficient current transmission.
- Large flat cable surfaces provide high capacitive, low inductive coupling between power and ground conductors.
- Reduced noise.
- Cables are easily routed through confined spaces and provide increased quality assurance since they only fit one way.
- Termination of flat cable requires no stripping, does not reduce cable cross section and provides a reliable, low resistance, gas tight interface.
- Packaging flexibility – cables can be easily routed through confined spaces.

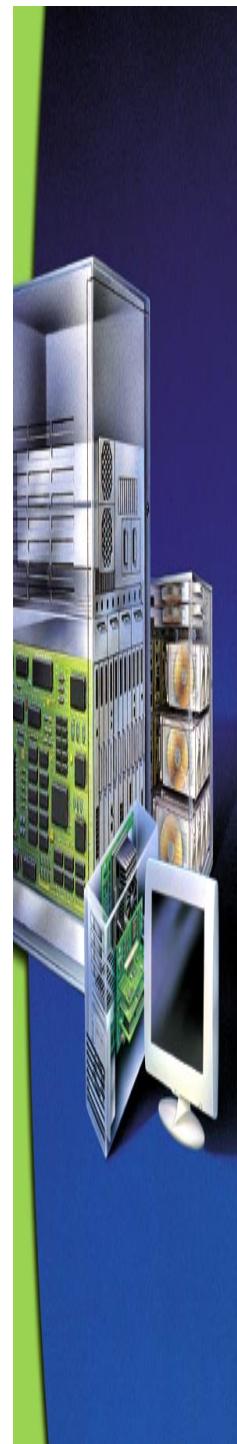
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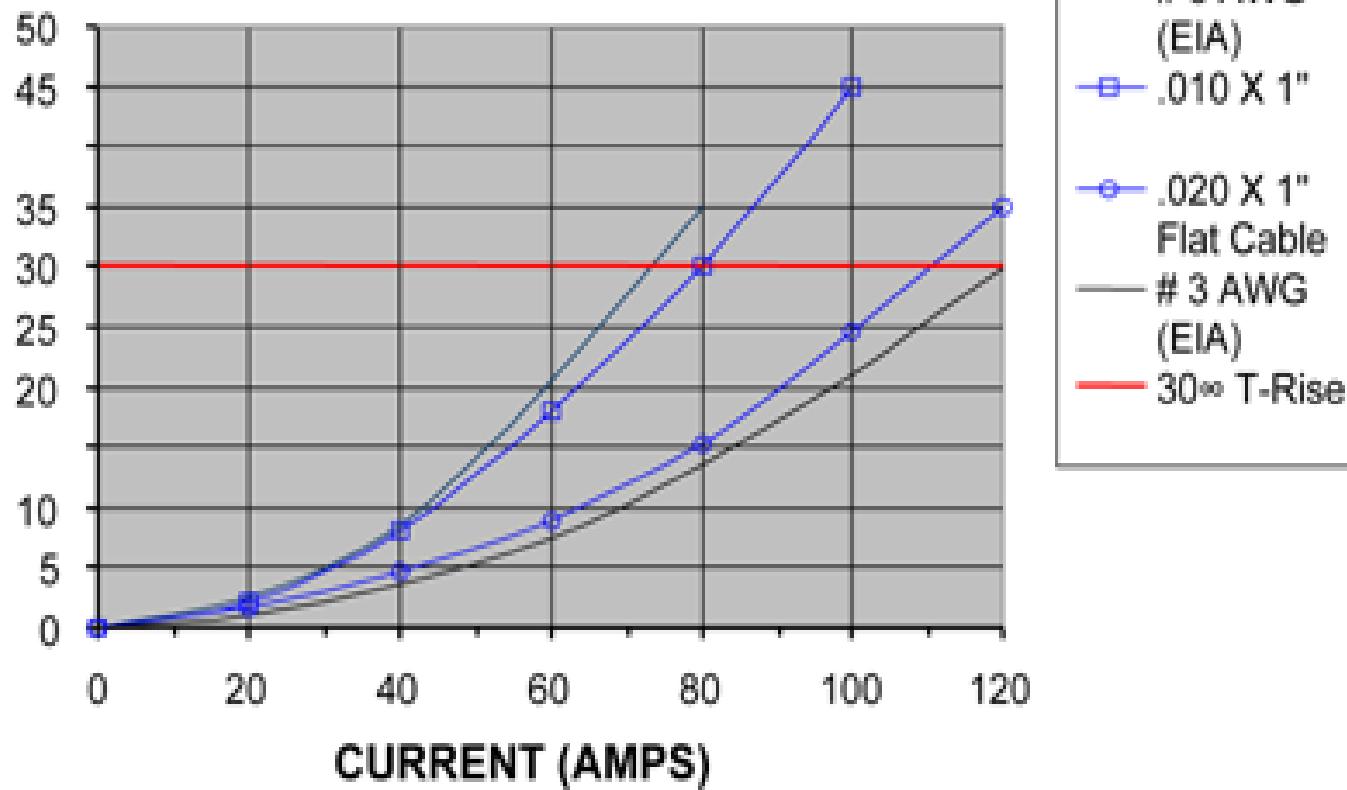
Heat Dissipation

- Because the surface area of flat cable is twice that of an equivalent round wire, convective heat flow reduces the operating temperature of the conductor for a given current.
- In the next chart, 6AWG Flat Cable is shown to carry 110AMPS with a T-rise of 30°C, while 6AWG round wire carries only 75AMPS, with an equivalent operating temperature. The flat cable carries almost as much current as a 3AWG round wire.
- The advantage is less copper, therefore less weight and less cost per ampere of rated current.

Current Rating

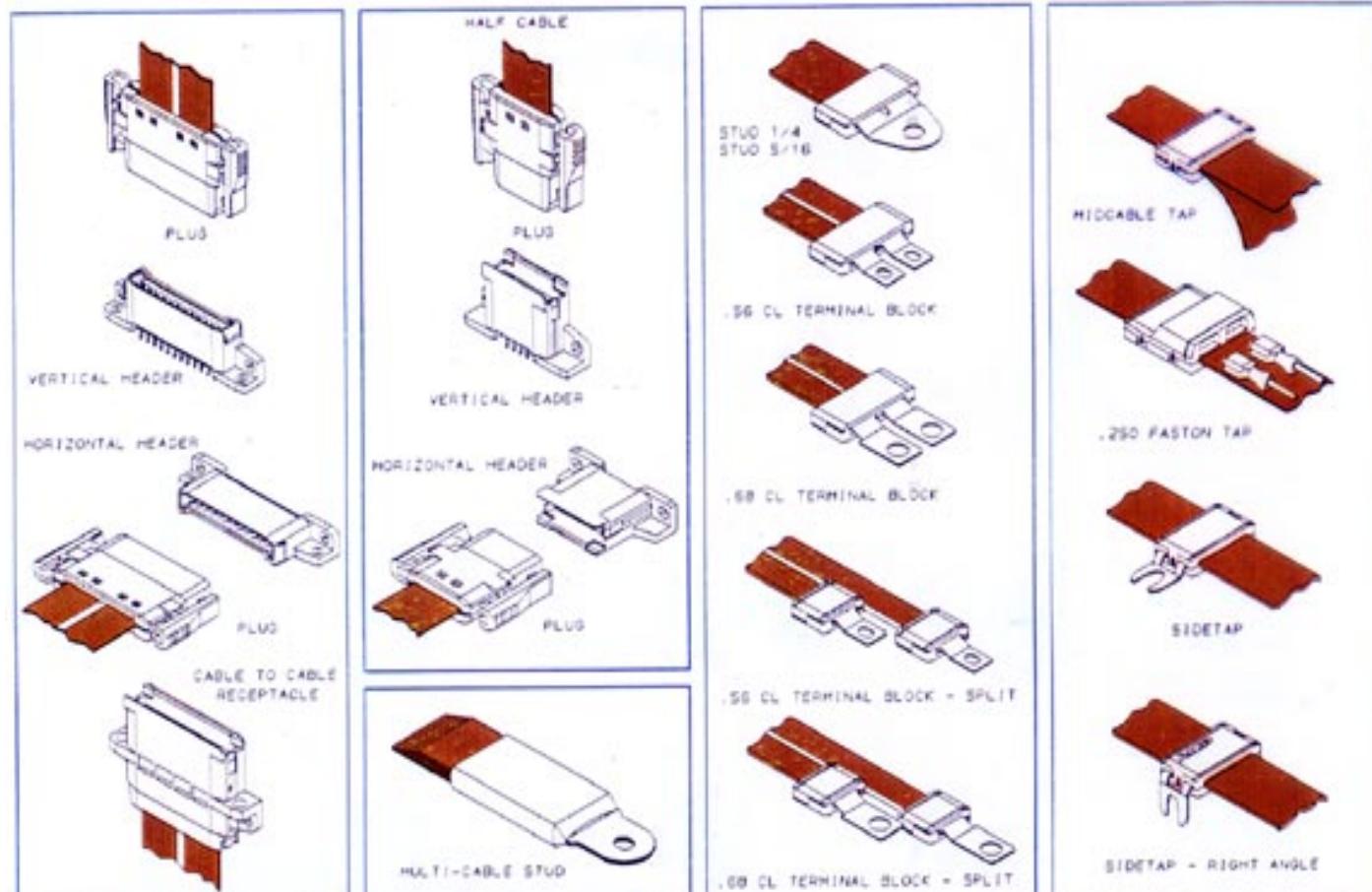


CONDUCTOR T-RISE



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Wave Crimp System Application Selection Chart



AMPOWER Wave Crimp System APPLICATION SELECTION CHART

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Wave Crimp System



SELF - ALIGNING CONNECTORS



2, 3, OR 4 POWER CIRCUITS



4, 6, OR 8 POWER CIRCUITS



4, 6, OR 8 POWER CIRCUITS & 8 SIGNAL CIRCUITS



4, 6, OR 8 POWER CIRCUITS & 21 SIGNAL CIRCUITS

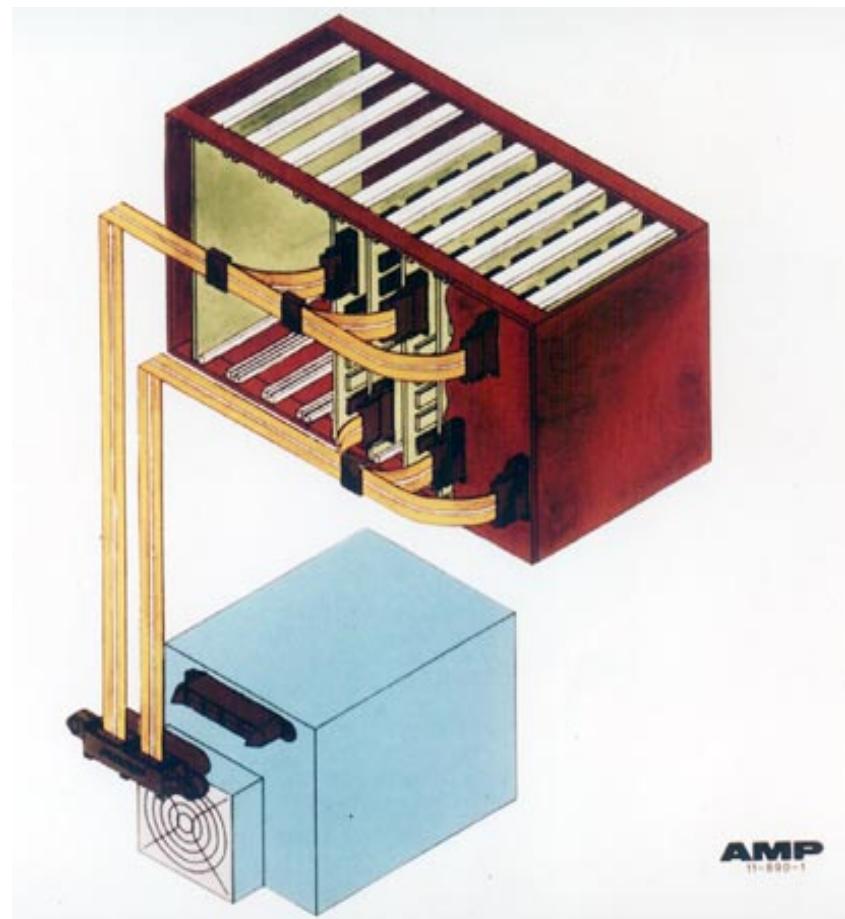
CABLE TYPES	
SINGLE CONDUCTOR	.010
DUAL CONDUCTOR	.010
SINGLE CONDUCTOR	.020
DUAL CONDUCTOR	.020

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AMPOWER Wave Crimp Applications

- Primary applications of the Wave Crimp product have been modular power supply current distributions to card cages or direct to circuit boards.
- Blind mate connectors feature sequential mating and have remote sense lines integrated.

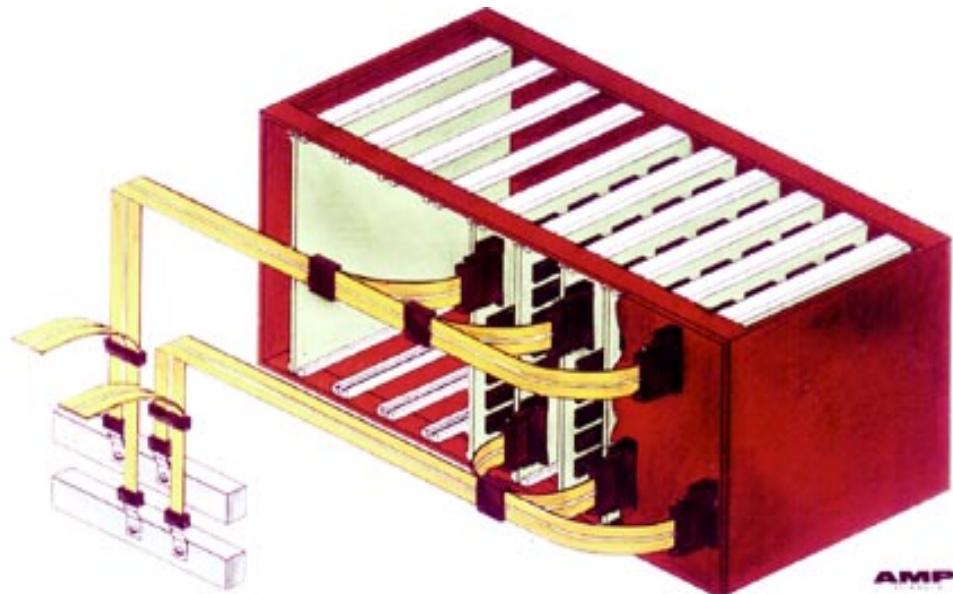


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AMPOWER Wave Crimp Applications

- Other packaging options allow for Wave Crimp Cables to serve as the secondary bussing option when used in combination with larger buss bars.

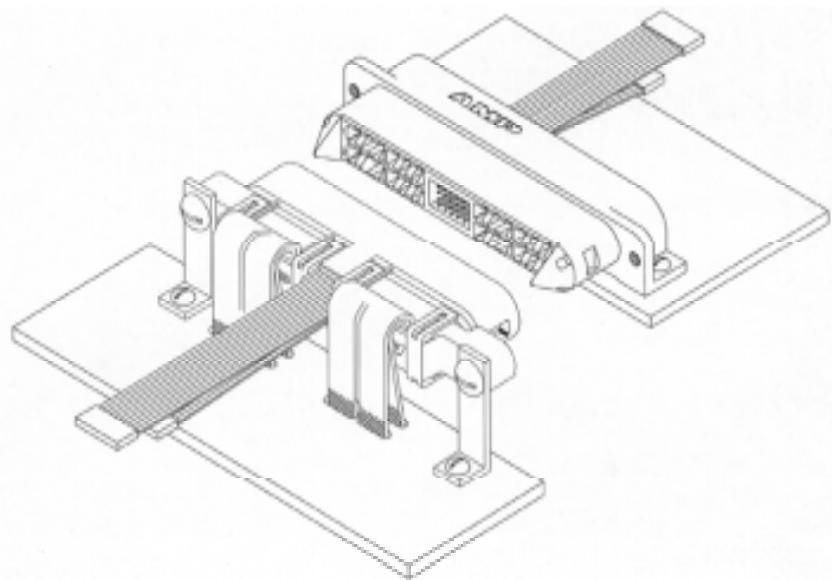


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AMPOWER Wave Crimp Applications

- Drawer connectors are commonly used in board to board configurations for the modular engagement of power supplies.
- Cable ends are stripped and tinned and then run through wave solder for mounting to the PC board.





AMPOWER Wave Crimp

Part Numbers

Self-Aligning Headers

Tail Type	Tail Length	2 Cable Header	4 Cable Header	4 Cable Header 8 Signal Lines	4 Cable Header 21 Signal Lines
Solder Tail	3.10 .122	765527-1	765208-1	765249-1	765265-1
Solder Tail	3.96 .156	765527-2	765208-2	765249-2	765265-2
Solder Tail	5.74 .226	765527-3	765208-3	765249-3	765265-3
ACTION PIN Tail	3.66 .144	765527-5	765208-5	765249-5	765265-5
Solder Tail	3.10 .122	765527-6	765208-6	765249-7	765265-6
Solder Tail	3.96 .156	765527-7	765208-7	765249-8	765265-7
Solder Tail	5.74 .226	765527-8	765208-8	765249-9	765265-8

Right Angle Self-Aligning Headers

Note: Dimensions are in millimeters over inches.

2 Cable Header	765608-1
4 Cable Header	766510-1

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AMPOWER Wave Crimp Part Numbers

Separable Interface Header - Half Width

Tail Type	Tail Length	Horizontal	Vertical
Solder Tail	3.15 .124	765450-1	765449-1
Solder Tail	4.19 .165	765450-2	765449-2
Solder Tail	5.72 .225	765450-4	765449-4
ACTION PIN Tail	3.66 .144	-	765451-1
Solder Tail	3.15 .124	765450-5	765449-5
Solder Tail	4.19 .165	765450-6	765449-6
Solder Tail	5.72 .225	765450-8	765449-8

Separable Interface Header - Full Width

Tail Type	Tail Length	Horizontal	Vertical
Solder Tail	3.15 .124	765204-1	765206-1
Solder Tail	4.19 .165	765204-2	765206-2
Solder Tail	5.72 .225	765204-4	765206-4
ACTION PIN Tail	3.66 .144	-	765271-1
Solder Tail	3.15 .124	765204-5	765206-5
Solder Tail	4.19 .165	765204-6	765206-6
Solder Tail	5.72 .225	765204-8	765206-8

Note: Dimensions are in millimeters over inches.

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AMPOWER Wave Crimp

Performance Data

- Voltage Rating: 250 VAC RMS/DC
 - Single Conductor cable assemblies are available with a 600 VAC RMS/DC rating
- Dielectric Withstanding Voltage:
 - Power Contact: 1500 VAC
 - Signal Contact: 1200 VAC
- Insulating Resistance:
 - 5,000 megohms initial
 - 1,000 megohms final
- Temperature Range: -55°C to +105°C

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AMPOWER Wave Crimp Technical Documents

Product Specifications

- 108-1308 – Separable Interface
- 108-1313 – Terminal Block and Stud Interface
- 108-1315 – Cable Tap Interface
- 108-1319 – Drawer Connector
- 108-1387 – FASTON Wire Tap
- 108-1391 – Side Tap
- 108-1323 – Cable Specification
- 108-1410 – ACTION PIN Header
- 108-1436 – Cable to Cable Drawer Connector
- 108-1479 – ACTION PIN Self-Aligning Connector
- 108-1403 – Self-Aligning Header and Receptacle
- 108-1408 – WAVECRIMP System (Cable to Cable)

Application Specification – 114-49005

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AMPOWER Wave Crimp Contacts

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Product Engineer – Jim Scholz

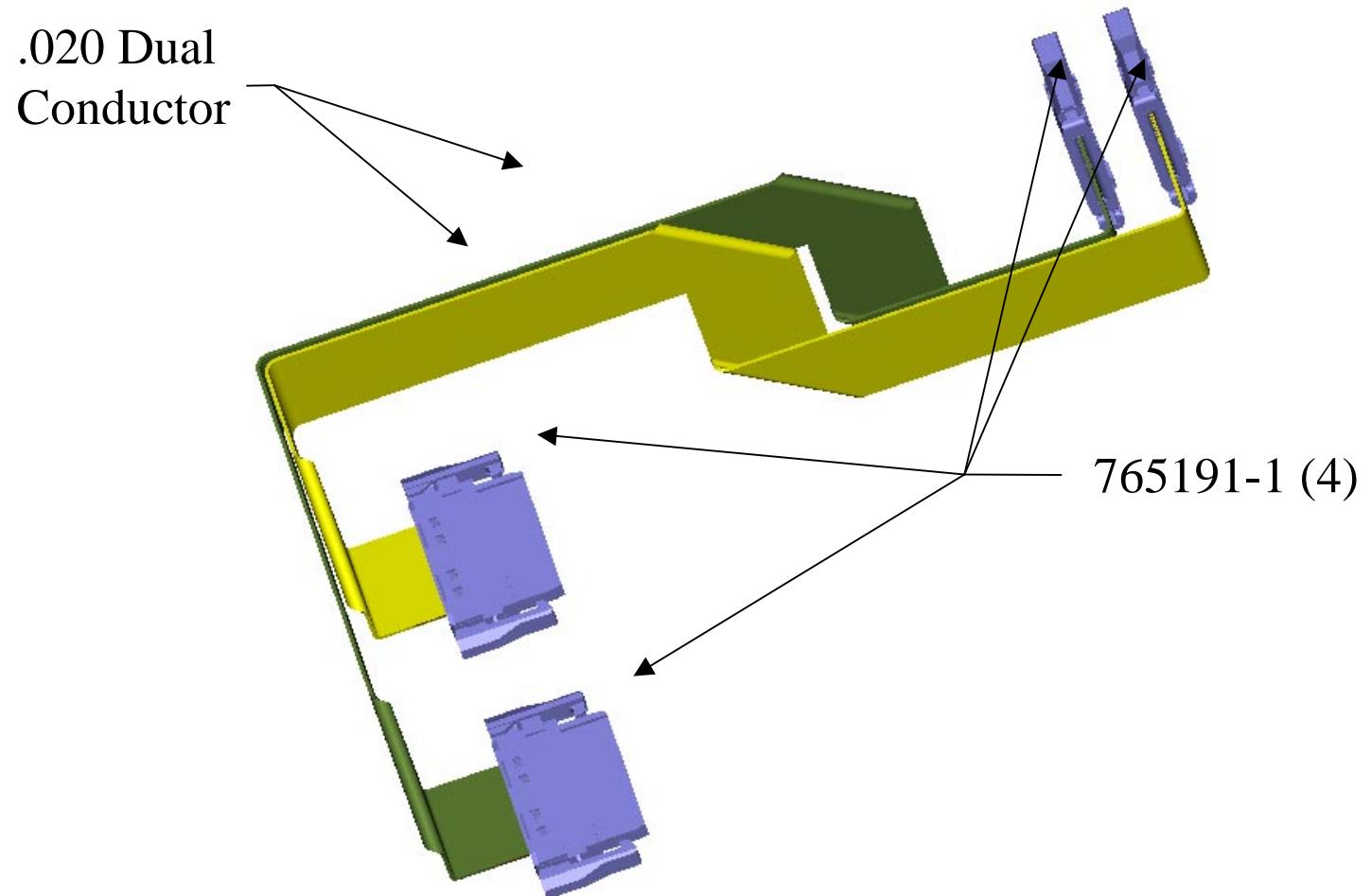
Phone: 717-592-3256

Fax: 717-986-5350

Email: jim.scholz@tycoelectronics.com

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AMPOWER Wave Crimp Flat Cable Assembly Example



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Wave Crimp Applications

Radar Systems

Electric vehicles

Locomotives

Motor Homes

High Speed Trains

HD TV Transmitters

Satellites

Cellular Phone Base Stations

Traffic Control Systems

Aircraft Controls

Gas Spectrometer

Roof Mounted Solar Panels

Stereo Equipment

Festoon Lamps

No Fault Computers

Subway Trains

Nuclear Power Plant Controllers

Modular Office Furniture

Video on Demand Systems

Refrigerated Shipping Containers

Surgical Anesthesia Units

Industrial Test Equipment

Main Frame Computers

Roof Mounted Solar Panels

High Speed Digital Imager

Ultrasound Equipment

Industrial Looms

Workstations

Simulators

Large Data Storage Systems

Portable Control Towers

Microchip test Systems

Solar Cars

Blood analyzers

Pizza Warmers

File Servers

ATM Switches

Grounding Straps

Electric Wheelchairs

Welding Units

Wire Bonders

CATCHING
THE WAVE